What is Claimed:

1   1. An apparatus for use in a cephalostat comprising:

2   a collimator for defining the shape of an X-ray beam;

3   a soft tissue filter screen for attenuating a portion of the X-ray beam,

4   wherein the soft tissue filter screen comprises:

5   a)   an anterior facial portion having a leading edge, wherein

6   the leading edge is located at the most posterior position of the anterior facial

7   portion, and

8   b)   a submental-neck portion coupled to the anterior facial

9   portion and having a leading edge at a position posterior relative to the leading edge

10   of the anterior facial portion,

11   wherein the soft tissue filter screen is independently adjustable relative

12   to the collimator.

1   2. An apparatus according to claim 1, wherein the soft tissue filter

2   screen is L-shaped having a first leg and a second leg disposed perpendicular to one

3   another, wherein the anterior facial portion is the first leg and the submental-neck

4   portion is the second leg.

1   3. An apparatus according to claim 1, wherein the soft tissue filter

2   screen is adjustable relative to the collimator in the anterior/posterior direction.

1   4. An apparatus according to claim 1, wherein the soft tissue filter

2   screen is adjustable relative to the collimator in the superior/inferior direction.

1   5. An apparatus according to claim 1, wherein the anterior facial

2   portion and the submental-neck portion comprise a unitary component.

1   6. An apparatus according to claim 1, wherein the leading edge of the

2   anterior facial portion and the leading edge of the submental-neck portion are

3   beveled.

1   7. An apparatus according to claim 1, wherein the anterior facial

2   portion and the submental-neck portion are modular.

1   8. An apparatus according to claim 7, wherein the submental-neck

2   portion is adjustable relative to the anterior facial portion in the anterior/posterior

3   direction.

1   9. An apparatus according to claim 7, wherein the anterior facial

2   portion and the submental-neck portion are connected to one another along mated

3   beveled edges.

1   10. An apparatus according to claim 1, wherein the submental-neck

2   portion is adapted to enhance radiograph images of the neck contour of a patient.

1   11. An apparatus according to claim 1, wherein the soft tissue filter

2 screen is copper.

1   12. An apparatus according to claim 1, wherein the collimator

2 comprises four plates defining an opening to define the X-ray beam, wherein the

3 plates are independently adjustable relative to one another towards and away from

4 the center of the opening.

1   13. An apparatus according to claim 1, wherein the collimator

2 comprises a single frame defining an opening to define the X-ray beam.

1   14. A cephalometric radiology apparatus comprising

2   a support structure;

3   an X-ray source supported by the support structure for emitting X-

4 rays;

5   a collimator supported by the support structure and positioned along

6 the path of the X-rays for defining an X-ray beam emitted from the X-ray source;

7   a soft tissue filter screen for attenuating a portion of the X-ray beam

8 and mounted independently of the collimator, wherein the soft tissue filter screen

9 comprises:

10   a) an anterior facial portion having a leading edge, wherein

11 the leading edge is located at the most posterior position of the anterior facial

12 portion, and

13   b) a submental-neck portion coupled to the anterior facial

14 portion and having a leading edge at a position posterior relative to the leading edge

15 of the anterior facial portion,

16   wherein the soft tissue filter screen is independently adjustable relative

17 to the collimator; and

18   an X-ray detector to collect X-rays emitted from the X-ray source.

1   15. An apparatus according to claim 14 further comprising at least

2 one positioning light to identify an optimum position of the soft tissue filter relative

3 to the head of the patient, wherein said positioning light emits a signal

4 representative of the optimum position, and a controller responsive to the signal for

5 moving the soft tissue filter screen to the optimum position.

1   16. An apparatus according to claim 15, wherein the anterior facial

2 portion and the submental-neck portion are modular and adjustable relative to one

3 another, and the signal identifies a first data point corresponding to the optimum

4 position for the leading edge of the anterior facial portion, a second data point

5 corresponding to the optimum position for the leading edge of the submental-neck

6 portion, and a third data point corresponding to the optimum position for intersection

7 of the anterior facial portion and the submental-neck portion.

1   17. An apparatus according to claim 15, wherein the at least one

2   positioning light positions the soft tissue filter screen in at least one of the

3   anterior/posterior direction and the superior/inferior direction.

1   18. An apparatus according to claim 14, wherein the soft tissue filter

2   screen is mounted between the collimator and the X-ray source.

1   19. An apparatus according to claim 14, wherein the collimator is

2   mounted between the soft tissue filter screen and the X-ray detector.

1   20. A method for imaging soft tissue and hard tissue congruently on

2   the same radiograph comprising the steps of:

3   emitting X-rays from an X-ray source;

4   positioning a collimator across the X-rays to define an X-ray beam;

5   positioning a soft tissue filter screen across the X-ray beam

6   independently of the step of positioning the collimator, to attenuate the X-rays

7   passing through a portion of the forehead, nose, lips, chin and neck of a patient,

8   wherein the soft tissue filter screen comprises:

9   a)   an anterior facial portion having a leading edge, wherein

10   the leading edge is located at the most posterior position of the anterior facial

11   portion, and

12   b)   a submental-neck portion coupled to the anterior facial

13   portion and having a leading edge at a position posterior relative to the leading edge

14   of the anterior facial portion; and

15   collecting the X-rays on a radiograph.

1   21. A modular soft tissue filter screen system for use with a

2   cephalostat having a collimator for defining an X-ray beam, which system comprises:

3   a soft tissue filter screen for attenuating a portion of the X-ray beam,

4   wherein the soft tissue filter screen comprises:

5   a)   an anterior facial portion having a leading edge, wherein

6   the leading edge is located at the most posterior position of the anterior facial

7   portion, and

8   b)   a submental-neck portion coupled to the anterior facial

9   portion and having a leading edge at a position posterior relative to the leading edge

10   of the anterior facial portion, and

11   a mounting component supporting the soft tissue filter screen and

12   adapted to be attached to the cephalostat at a position such that the soft tissue filter

13   screen is aligned within the X-ray beam.

1   22. A system according to claim 21, wherein the soft tissue filter

2   screen is L-shaped having a first leg and a second leg disposed perpendicular to one

3   another, wherein the anterior facial portion is the first leg and the submental-neck

4   portion is the second leg.

1   23. A system according to claim 21, wherein the soft tissue filter

2   screen is adjustable in the anterior/posterior direction relative to the collimator.

1   24. A system according to claim 21, wherein the anterior facial portion

2   and the submental-neck portion are modular.

1   25. A system according to claim 24, wherein the submental-neck

2   portion is adjustable relative to the anterior facial portion in the anterior/posterior

3   direction.

1   26. A system according to claim 24, wherein the anterior facial portion

2   and the submental-neck portion are connected to one another along mated beveled

3   edges.

1   27. A system according to claim 21, wherein the anterior facial portion

2   and the submental-neck portion comprise a unitary component.

1   28. A system according to claim 21, wherein the leading edge of the

2   anterior facial portion and the leading edge of the submental-neck portion are

3   beveled.

1   29. A system according to claim 21, wherein the soft tissue filter

2   screen is adjustable relative to the collimator in a inferior/superior direction.

1   30. A system according to claim 21, wherein the submental-neck

2   portion is adapted to enhance radiographic images of the facial soft tissue inferior to

3   the mandible and the neck contour of a patient

1   31. A system according to claim 21, wherein the soft tissue filter

2   screen is copper.

1   32. A method according to claim 20 further comprising:

2   identifying an optimum position of the soft tissue filter screen; and

3   generating a signal representative the optimum position,

4   wherein the step of positioning the soft tissue filter screen comprises

5   receiving the signal and moving the soft tissue filter screen to the optimum position

6   by adjusting the soft tissue filter screen in at least one of the anterior/posterior

7   direction and the superior/inferior direction.

1   33. A method according to claim 32, wherein the anterior facial

2   portion and the submental-neck portion are modular and adjustable relative to one

3   another, and the signal identifies a first data point corresponding to the optimum

4   position for the leading edge of the anterior facial portion, a second data point

5   corresponding to the optimum position for the leading edge of the submental-neck

6   portion, and a third data point corresponding to the optimum position for intersection

7   of the anterior facial portion and the submental-neck portion.

1   34. A modular soft tissue filter screen system according to claim 21

2   further comprising a housing for the collimator, wherein the mounting component for

3   the soft tissue filter screen is adapted to be attached to the housing of the collimator.